

Amendments to the Claims

Please cancel Claims 61-100. Please amend Claims 32 and 42. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. – 25. Canceled

26. (Previously presented) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:

a guide assembly including an elongated portion having a longitudinal axis of rotation, a receiving passage and a distal end that is positioned a radial distance away from the longitudinal axis;

a surgical tip assembly disposed through, and at least partially supported by, the receiving passage of said guide assembly; and

a drive unit coupled to at least said guide assembly for rotating said guide assembly and, and by virtue of the distal end being disposed a radial distance away from the longitudinal axis, thereby causing the distal end of said surgical tip assembly to orbit the longitudinal axis.

27. (Previously presented) The surgical system of claim 26, wherein said guide assembly includes a guide tube that is curved at its distal end so as to position the distal end a radial distance away from the longitudinal axis.
28. (Previously presented) The surgical system of claim 27, wherein said surgical tip assembly has its distal end extend beyond the curved distal end of said guide tube.
29. (Previously presented) The surgical system of claim 26, wherein said surgical tip assembly provides at least three degrees of freedom.

30. (Previously presented) The surgical system of claim 26, wherein said guide assembly and said surgical tip assembly are coupled to the drive unit.
31. (Previously presented) The surgical system of claim 26, wherein said surgical tip assembly includes, at its distal end, an end effector having opposing grip portions.
32. (Currently Amended) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:
- a guide assembly positionable in a surgical environment, said guide assembly including a proximal end and a distal end, and including ~~an opening~~ a passage along a longitudinal length of said guide assembly, said guide assembly being adapted for insertion into a patient and being adapted for rotation about a longitudinal axis of said guide assembly when inserted into the patient;
- an instrument member having an end effector that is used in surgical procedures, and is received by said proximal end of said guide assembly, passed through said ~~opening~~ passage, and to said distal end of said guide assembly within the patient; and
- a drive unit coupled to said instrument member for manipulating said end effector within the patient.
33. (Previously presented) The surgical system of claim 32, wherein said drive unit is further coupled to said guide assembly for rotating said guide assembly and thereby rotating said end effector within the patient.
34. (Previously presented) The surgical system of claim 32, wherein said guide assembly includes a guide tube that is curved at its distal end.
35. (Previously presented) The surgical system of claim 34, wherein said end effector is at least partially insertable into said guide tube.

36. (Previously presented) The surgical system of claim 32, wherein said end effector provides at least three degrees of freedom of movement within the patient.
37. (Previously presented) The surgical system of claim 36, wherein said end effector includes two opposing gripper portions for use in surgical procedures.
38. (Previously presented) The surgical system of claim 32, wherein said drive unit is coupled to a computer processing unit, and wherein said drive unit is adapted to control the movement of said end effector responsive to an automated procedure stored in said computer processing unit.
39. (Previously presented) The surgical system of claim 32, wherein said drive unit is detachably coupled to said end effector.
40. (Previously presented) The surgical system of claim 32, wherein said drive unit is detachably coupled to said guide assembly.
41. (Previously presented) The surgical system of claim 32, wherein said drive unit is further coupled to said guide assembly for rotating said guide assembly and thereby rotating said end effector within the patient, and for sliding said guide assembly along a linear path with respect to the surgical environment.
42. (Currently amended) A surgical instrument apparatus comprising:
 a surgical instrument including;
 a distal end that carries a surgical procedure member and that is adapted to be inserted into a patient during surgery;
 a proximal end that is adapted to remain outside of the patient during surgery; and
 ~~a tubular adaptor having means for receiving and supporting said instrument;~~
 a plurality of link members disposed intermediate said proximal and distal ends coupled to one another via at least one joint that is interposed between adjacent link

members, said instrument providing at least five degrees of freedom of movement of the distal end of said instrument inside of the patient; ~~and~~

a tubular adaptor having means for receiving and supporting said surgical instrument with the distal end of the surgical instrument extending beyond a distal end of the tubular adaptor; and

drive means for effecting movement of said plurality of link members about said at least one joint, and for controlling rotation of said adaptor while supporting said instrument.

43. (Previously presented) A surgical instrument for use in surgical procedures that are performed at an operative site internal of a patient, said surgical instrument comprising:

a guide member including a proximal end and a distal end that is adapted to be inserted into a patient, said guide member being adapted to rotate with respect to a longitudinal axis thereof;

an end effector for use during surgical procedures, said end effector being separable from and insertable into a patient through said guide member; and

actuation means for effecting movement of said end effector by rotation of said guide member.

44. (Previously presented) The surgical instrument of claim 43, wherein said actuation means is remotely controlled from a user interface where a surgeon can manipulate an input device in controlling the movement of the instrument

45. (Previously presented) The surgical instrument of claim 43, wherein said guide member includes a receiving passage and the distal end thereof is positioned a radial distance away from the longitudinal axis; said actuation means causing said end effector to orbit the longitudinal axis.

46. (Previously presented) The surgical instrument of claim 43, wherein the actuating means effects movement of the end effector by operating the end effector via mechanical cabling.
47. (Previously presented) The surgical instrument of claim 43, wherein the actuating means effects movement of the end effector by rotating a tubular holder of the guide member.
48. (Previously presented) The surgical instrument of claim 47, wherein the actuating means effects movement of the end effector by pivoting the tubular holder of the guide member about an axis that is perpendicular to said longitudinal axis, and that defines a plane of pivoting of said tubular holder.
49. (Previously presented) The surgical instrument of claim 48, wherein the distal end of the tubular holder is positioned a radial distance away from the longitudinal axis, and wherein, when the tubular holder is rotated, the distal end moves out of said pivot plane.
50. (Previously presented) The surgical instrument of claim 43, wherein said actuating means comprises a plurality of drive motors, all of which are disposed remote from said instrument.
51. (Previously presented) The surgical instrument of claim 50, wherein all of said motors are maintained in a stationary position outside the sterile field.
52. (Previously presented) A robotically-controlled surgical instrument system for use in a surgical procedure, and including a surgical instrument having a proximal end and a distal end, said surgical instrument system comprising:
- an end effector at the distal end of said surgical instrument, said end effector for use within a patient's body during the surgical procedure;
 - a tubular holder for receiving and supporting said instrument, having a longitudinal axis, a proximal portion disposed outside the patient during surgery and a

distal portion disposed within the patient's body during surgery, and having its distal portion positioned a radial distance away from the longitudinal axis;

said instrument distal end including a flexible distal portion coterminous with the distal portion of the tubular holder; and

a coupling assembly at the proximal end of said surgical instrument for securing said surgical instrument to an actuation unit within a surgical environment.

53. (Previously presented) The surgical instrument of claim 52, wherein the flexible distal portion of the instrument comprises a flexible instrument shaft that is bendable so as to comply with the configuration of the tubular holder distal portion.
54. (Previously presented) The surgical instrument of claim 53, wherein the instrument proximal end includes a rigid instrument shaft.
55. (Previously presented) The surgical instrument of claim 54, wherein the distal portion of the tubular holder is curved, the flexible instrument shaft being coterminous with the curved distal portion.
56. (Previously presented) The surgical instrument of claim 55, wherein said coupling assembly controls rotation of said tubular holder so as to provide an additional degree of freedom of movement to the end effector.
57. (Previously presented) A method of manipulating a surgical instrument, said method comprising the steps of:
- inserting a distal portion of a surgical guide member into a patient;
 - removably securing the surgical guide member in a surgical environment;
 - inserting a surgical tip member through the guide member; and
 - actuating a drive unit to effect the manipulating of the position of the surgical tip member within the patient with at least one degree of freedom of movement, and rotating

the surgical guide member to provide at least an additional degree of freedom of movement of the surgical tip member.

58. (Previously presented) The method of claim 57, wherein said method further includes the step of receiving input signals from a user, and said step of manipulating the position of the surgical tip member being responsive to the input signals.
59. (Previously presented) The method of claim 57, wherein said method further includes the step of manipulating the position of the guide member by linearly translating the guide member.
60. (Previously presented) The method of claim 57, wherein said surgical tip member provides at least three degrees of freedom.

61. – 100. Canceled

101. (Previously presented) A surgical instrument system for use in surgical procedures, said surgical instrument system comprising:

a guide assembly including a proximal portion, an elongated portion having a longitudinal axis of rotation and a distal portion that is adapted for insertion through an incision of a patient, and having a distal end that is positioned a radial distance away from the longitudinal axis;

a surgical tip assembly including an end effector supported at the distal end of said guide assembly; and

a drive unit coupled to at least said guide assembly for;

rotating said guide assembly and, and by virtue of the distal end being disposed a radial distance away from the longitudinal axis, thereby causing the end effector to rotate about the longitudinal axis, and

controlling said guide assembly to pivot at the incision with only single axis motion.

102. (Previously presented) The surgical instrument system of claim 101 wherein said drive unit controls said guide assembly to pivot from its proximal end.
103. (Previously presented) The surgical instrument system of claim 101 wherein said drive unit controls said guide assembly to pivot, said pivot providing motion of the proximal end of the guide assembly in substantially only a single plane external of the patient.
104. (Previously presented) The surgical instrument system of claim 101 wherein said drive unit controls said guide assembly to pivot, said pivot providing motion at the incision so that the proximal end of the guide assembly moves in substantially only one plane external of the patient.
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